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JUL 15 2016

Ref: EPR-N

Jenna Whitlock, Utah State Director
U.S. Bureau of Land Management
440 West 200 South, Suite 500
Salt Lake City, Utah 84101

Re: Enefit American Oil Utility Corridor Project Draft EIS; CEQ # 20160077

Dear Ms. Whitlock:

The U.S. Environmental Protection Agency has reviewed the Bureau of Land Management's (BLM) Draft Environmental Impact Statement (EIS) for Enefit American Oil (Enefit)'s applications for rights-of-way (ROW) to construct various utilities on federal lands. In accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the EPA has reviewed and commented on this Draft EIS. The EPA's principal comments are included in this letter with additional comments provided in the enclosure.

Project Background

The Draft EIS considers environmental impacts associated with five ROWs (collectively referred to as the Utility Corridor) to provide access and utilities to Enefit's "South Project," a proposed commercial oil shale mining, retorting, and upgrading operation located on non-federal land within the exterior boundary of the Uintah and Ouray Indian Reservation in Uintah County, Utah. Activities on BLM-administered land include 19 miles of water supply pipeline, 9 miles of natural gas supply pipeline, 11 miles of oil product line, 30 miles of powerlines, and 6 miles of upgrading to Dragon Road. Since the only purpose for the Utility Corridor is to support Enefit's South Project, BLM has appropriately considered the Utility Corridor and the South Project together. The South Project will consist of 7,000 to 9,000 acres of surface mining, 320 acres of plant facilities for retorting and upgrading, and is the first commercial scale oil shale project in the US, which is expected to produce over 18 million barrels of oil per year for 30 years.

Summary of Principal Comments

Although the Draft EIS considers the environmental impacts within the Utility Corridor itself in some detail, the analysis of the South Project falls substantially short of the level of detail and rigor appropriate to evaluate the environmental impacts of the project before BLM. A primary purpose of a NEPA analysis is to take a hard look at the environmental impacts, including the direct, indirect and cumulative effects of a proposed project and feasible alternatives, so that the decision maker can make a reasoned choice on the project and the public has sufficient information to enable meaningful input. The indirect and cumulative effects considered pursuant to NEPA include the effects that are reasonably

foreseeable. In this instance, the South Project is more than reasonably foreseeable; it is the stated purpose for the application for the Utility Corridor. The most significant environmental impacts associated with this project are the indirect effects associated with the South Project oil shale operations. Despite the fact that this is a very large project, involving surface mining, processing, retorting and upgrading oil shale, the Draft EIS contains very little to no quantitative analysis of the expected impacts. That omission is even more striking given the available information which suggests that the South Project would have potentially very serious implications for climate change, and has the potential to exacerbate existing impaired water and air quality conditions. The very general qualitative statements on these subjects in the Draft EIS do not allow the public or the decision maker to understand or evaluate the environmental impacts of this project. Due to the likely magnitude and significance of these indirect effects, a Supplemental EIS (SEIS) is warranted to provide the detail necessary to appropriately assess and consider the impacts associated with the South Project.

According to the Draft EIS, "[t]he Applicant has provided BLM with all the information it has for the South Project mine plan and is unwilling to expend further resources to develop the mine plan and engineering specifications until it receives a decision on the utility corridor rights-of-way application." The BLM was justified in requesting additional detail from Enefit to support the BLM's evaluation of indirect effects. As a result of Enefit's refusal to provide sufficient information to support a quantified effects analysis, the Draft EIS does not take a hard look at the potential indirect impacts associated with the South Project.

The enclosed *Additional Comments* provide additional topics and issues that should be addressed in the EIS and BLM's subsequent decision. The principal areas on which potential impacts appear significant but that are not addressed in detail or with the necessary rigor in the Draft EIS are included below.

Greenhouse gases and climate change

The Draft EIS does not include a quantitative estimate or even a range of estimates of the indirect greenhouse gas (GHG) emissions associated with the project. This is particularly notable given the higher GHG intensity of oil shale compared to reference crudes. While estimates of lifecycle GHG emissions are limited due to lack of U.S. commercial-scale oil shale development, existing research indicates that oil shale is the most energy intensive fuel among upgraded primary fossil fuel options.[1] In addition, a range of well-to-wheel emissions associated with the production of diesel from oil shale provide a reasonable estimate of lifecycle emissions absent additional detailed information provided by the company. The estimated production rates for the South Project are stated to be 50,000 barrels of shale oil per day for 30 years. At between 23 and 73% greater GHG intensity for this oil compared to the U.S. 2005 average diesel baseline,[2] the GHG emissions associated with this project are potentially very large and warrant detailed analysis in the EIS. The EPA also notes that it is not appropriate to

[1] Nduagu and Gates. 2015. Unconventional Heavy Oil Growth and Global Greenhouse Gas Emissions. Environmental Science and Technology Journal. http://pubs.acs.org/doi/pdf/10.1021/acs.est.5b01913

[2] Brandt, A.R. (2009) Converting oil shale to liquid fuels with the Alberta Taciuk Processor: Energy inputs and greenhouse gas emissions. *Energy & Fuels*. Issue 23, pp. 6253-6258.
Brandt, A.R. Converting oil shale to liquid fuels: Energy inputs and greenhouse gas emissions of the Shell in situ conversion process. Environmental Science & Technology 42(19) 7489-7495. (2008). DOI: 10.1021/es800531f.

evaluate the significance of GHG emissions by comparing emissions from one project to national or global GHG emission totals. Such comparisons obscure rather than explain how to consider GHG emissions under NEPA.

Air quality

The discussion of air quality impacts does not provide sufficiently detailed information to determine the potential magnitude of impacts from the South Project. The EPA recommends that a quantitative estimate of air quality impacts be provided in the SEIS. According to the BLM's 2012 Oil Shale and Tar Sands Programmatic EIS (OSTS PEIS), oil shale mining and processing is expected to emit NO_x, CO, PM, VOCs and SO_2. These pollutants are likely to impact local and regional air quality. In particular, the Draft EIS qualitatively describes emissions of NO_x and VOCs from the South Project as being likely to exacerbate existing ozone concerns in the Uinta Basin. The Basin currently experiences monitored ozone exceedances, and additional emissions of ozone precursors within the Uinta Basin should be expected to contribute to any future exceedances or violations of the ozone National Ambient Air Quality Standards (NAAQS). As an indicator of the level of emissions anticipated, the Draft EIS states that the South Project facility is expected to be classified as a major source for purposes of Clean Air Act permitting.

Water quality

The proposed surface mining of 7,000 to 9,000 acres for the South Project is all within the Evacuation Creek watershed. Evacuation Creek is on Utah's 303(d) list of impaired waters. The Draft EIS lacks a detailed analysis of the potential for the South Project to exacerbate the water quality impairments in this watershed including on BLM lands. Runoff and groundwater impacts from the mining processes would have the potential to impact water quality, particularly because the watershed is limited in flow and the waterbody is already impaired. In addition, the BLM's 2012 OSTS PEIS states that "[a]t both surface and underground mining sites, the spent shale piles and mine tailings could be sources of contamination for salts, metals and hydrocarbons. If surface retorting is used to upgrade oil shale, fly ash and boiler bottom ash would also be produced by the retorts as wastes. Leachates containing associated contaminants may enter nearby surface water bodies or groundwater and continue to degrade the water quality well after site reclamation if the wastes are not properly managed." We recommend that the BLM work with the applicant to provide further detail on the South Project so that a more refined analysis of the affected environment is presented and a more detailed projection of mitigation efforts necessary to avoid exacerbating existing impairment of surface waters can be developed.

Draft EIS Rating

The additional information specified above is necessary to ensure the information in the EIS is adequate to fully inform decision makers and the public about the potential environmental consequences of the project. Since the Draft EIS does not contain the necessary information to evaluate the environmental impacts of the project and the available information suggests that the impacts would in fact be very significant, the EPA is giving the Draft EIS Preferred Alternative a rating of 3 – Inadequate Information. As with all projects that have not addressed potentially significant impacts, this proposal is a potential candidate for referral to the Council on Environmental Quality (CEQ). We recommend that the additional information and analysis be circulated for full public review in a Supplemental Draft EIS. A description of the EPA's rating system can be found at: http://www2.epa.gov/nepa/environmental-

impact-statement-rating-system-criteria.

Thank you for the opportunity to review and comment on the Draft EIS for the Enefit Utility Corridor Project. We hope that our comments here and in the enclosure will assist the BLM in preparing an adequate NEPA analysis and it will be important that we work closely together to resolve the identified inadequacies in the Draft EIS. If you have any questions or comments, please contact Phil Strobel, Region 8 NEPA Program Director at 303-312-6704, strobel.philip@epa.gov.

Sincerely,

Shaun L. McGrath
Regional Administrator

Enclosure

Cc: Ester McCullough, Field Office Manager, BLM, Vernal Field Office
Stephanie Howard, BLM, Vernal Field Office
Catie Buchner, BLM, Vernal Filed Office

U.S. Environmental Protection Agency
Additional Comments - Enefit American Oil Utility Corridor Project Draft EIS

In addition to the comments in the cover letter, the EPA offers the following comments that should also be considered in the EIS and BLM's subsequent decision.

Greenhouse Gases and Climate Change Impacts

The effect of climate change on the environmental impacts of this project. The EPA recommends that the EIS describe potential changes to the affected environment that may result from climate change. Including future climate scenarios in the EIS would help decision makers and the public consider whether the environmental impacts of the alternatives would be exacerbated by climate change. If impacts may be exacerbated by climate change, additional mitigation measures may be warranted.

The EPA recommends considering climate adaptation measures based on how future climate scenarios may impact the project. The National Climate Assessment (NCA), released by the U.S. Global Change Resource Program[1] contains scenarios for regions and sectors, including energy and transportation. We recommend that the EIS use NCA or other peer-reviewed climate scenarios because this can inform alternatives analysis, and possible changes to the proposal can improve resilience and preparedness for climate change. Changing climate conditions can affect a proposed project, as well as the project's ability to meet the purpose and need presented in the EIS.

Mitigation. The Draft EIS includes a list of potential mitigation measures to reduce the GHG emissions of the South Project. The EPA recommends that the EIS analyze practicable mitigation measures to reduce project-related GHG emissions, locally and downstream, that the BLM work with the applicant to describe specific measures to reduce GHG emissions associated with the South Project and identify specific measures with co-benefits for reducing ozone precursor emissions given the proposed action is occurring in an area that is experiencing wintertime exceedances of the ozone NAAQS. These measures may include analysis of practicable mitigation opportunities and disclosure of the estimated GHG reductions associated with such measures - for example, energy efficiency, consideration of renewable energy resources to address energy needs for compressor stations and other facilities. We also recommend that the EIS make clear whether commitments have been made to ensure implementation of design or other measures to reduce GHG emissions.

Air Quality Impacts

In absence of an analysis to inform mitigation decisions, it is not clear whether the mitigation described in the Draft EIS is sufficient to avoid exceedances of the NAAQS associated with ROW construction activities. However, the action alternative requires Tier 2 engines or better for construction and diesel equipment thereby providing some assurance that construction impacts will be reduced, and we support requiring this mitigation as well as the mitigation measures 1 through 5 in Table 4-1.

With regard to item 6 in table 4-1, the text states, "Construction activities would occur in winter to reduce ozone issues encountered during summer time." The Uinta Basin experiences high wintertime ozone and this proposed mitigation would not be expected to be appropriate. The EPA recommends amending the statement to indicate that construction will not be conducted during anticipated high ozone events, regardless of season.

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[1] http://nca2014.globalchange.gov/report

Surface and Ground Water Impacts

The Draft EIS does not disclose what the effects of a projected 30 years of operation and maintenance on the Utility Corridor will have on water quality, erosion and sedimentation in the watershed. The Draft EIS primarily focuses on the initial construction phases, but does not evaluate the long-term effects. The Draft EIS notes that the South Project may be utilized to process material from its other substantial holdings in the vicinity. The EPA recommends that the EIS evaluate the implications of increased use of Dragon Road on water quality in order to deliver material from other project locations, such as Enefit's adjacent RD&D lease.

The Draft EIS does not adequately describe the reasonably foreseeable indirect effects a projected 30 years of operation at the South Project will have on erosion and sedimentation in the watershed. We encourage the BLM to work with the applicant to provide greater detail on the construction and mining operations of the South Project to further the understanding of any long term effects from the South Project in this impaired watershed.

The potential for a pipeline leak or rupture to impact surface and ground water resources is briefly discussed in the Draft EIS. Given the numerous waterbody crossings along the utility corridor, the importance of water resources in the Uinta Basin, and the anticipated 30 year operating life of the utility equipment, we recommend that the Final EIS include additional detail regarding potential adverse impacts to surface and ground waters from pipeline leaks or spills. We recommend that the BLM work with the applicant to provide the chemical characteristics of the product and the anticipated fate and transport of any spilled natural gas or product in the aquatic environment. We recommend that the analysis address the potential for both acute and chronic impacts to aquatic life anticipated from a spill. We further recommend that the Final EIS detail what spill prevention measures (e.g., shutoff hardware/software) will be utilized and evaluate the delay between leak detection and shut off when evaluating the potential volume of a spill.

The Draft EIS discloses that "[w]ater levels in the Bird's Nest aquifer range from a few feet below ground surface where the formation occurs as outcrop along Evacuation Creek to over 400 feet near the White River Mine, which is located approximately two miles northwest of the South Project area." Given how shallow the groundwater is in the South Project area, the EPA is concerned that mining activities may directly contact the aquifer, resulting in reasonably foreseeable and likely impacts to water quality and quantity. Further support for this comment and recommendation is found in the OSTS PEIS, which states, "[b]ecause a large volume of rock is disturbed in surface mining operations, the permeability of the geologic material in the mine and in overburden disposal areas is permanently increased. The porosity and permeability of spent shale backfill are also relatively high. Precipitation could infiltrate these materials and produce leachate with relatively high dissolved solids and organics, potentially causing long-term contaminant sources for groundwater." The EPA recommends that the BLM work with the applicant to provide more specifics regarding the South Project so that a more detailed analysis of groundwater impacts and specific mitigation measures may be presented in the EIS.

The Draft EIS states that the majority of the water supplied via the utility corridor to the South Project will come from the Green River through an existing 15 cfs water right. The Draft EIS notes that due to the uncertainty of the South Project design and operations, it may be necessary for additional water

sources to be utilized, and that should additional water sources be necessary, a new BLM SF-299 for additional rights of way and additional studies would be required. This assumes that additional water sources would be transported across the BLM's land. The Draft EIS does not specifically identify where additional water resources would be acquired. We recommend that the BLM work with the applicant to detail alternative water supply sources and upper range estimates of water usage for the South Project. Additionally, the Draft EIS notes the average flow in the Green River and asserts that the 15 cfs draw will not significantly reduce flows. We recommend the EIS discuss the cumulative effects of water usage by this and other projects, such as those identified in Table 4-32, or other major water users.

Specific Capacity Needed for Utility Corridor

Enefit has not provided BLM with engineering details for the South Project, and it remains unclear how the capacity requirements for the utilities were generated. The lack of information regarding the utility capacity needed for the South Project limits the ability to determine which alternate methods of obtaining those utilities may be available and reasonable. We recommend that the description of the intended use of the utilities for development and operation of the South Project provide enough detail to support the capacity requested for the proposed Utility Corridor and to ensure that the BLM makes an informed decision regarding the ROW. Additionally, the Draft EIS notes that the South Project may process material originating from Enefit's other substantial holdings in the area, including their BLM research, design and development (RD&D) lease, which is adjacent to the Utility Corridor and South Project. The EPA recommends that the BLM evaluate the potential for increased usage of the utility corridor, and subsequent direct impacts, should material from other locations be trucked to the South Project processing facility.

Consistency with Vernal Resource Management Plan

Because the South Project is surrounded by land managed by the BLM's Vernal Field Office, the potential environmental impacts of the South Project could inhibit the BLM's ability to achieve resource management goals. We recommend the SEIS specifically evaluate whether the South Project is likely to produce impacts that are not consistent with the resource objectives in the Vernal Resource Management Plan.

Right of Way Decision Criteria

To enable an evaluation of the proposed ROW against the criteria listed in BLM's guidance for making ROW decisions,[2] we recommend that the Supplemental EIS include additional assessment of whether the South Project's direct and indirect effects would:

- be consistent with the resource objectives in the applicable land use plan
- be consistent with federal, state and local environmental laws, or
- result in serious environmental consequences that could not be mitigated

For example, the Draft EIS states that the South Project is likely to contribute to the overall trends in Uinta Basin wintertime ozone. There are existing exceedances of the ozone NAAQS, and BLM's air

[2] http://www.blm.gov/style/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/cost_recovery.Par.58417.File.dat/ObtainingaROWPamphlet.pdf

quality modeling forecasts a trend toward nonattainment of the NAAQs in the Basin. The South Project may also adversely affect other resources on BLM lands. We recommend these analyses be specifically considered as the BLM determines whether this ROW is in the public interest.

Range of Alternatives

The Draft EIS analyzes a single utility corridor action alternative (the Proposed Action) and a No Action alternative. According to Council on Environmental Quality (CEQ) regulations and guidance, a lead agency must consider a reasonable range of action alternatives, and it is typically not appropriate for an EIS to analyze only a Proposed Action and No Action alternative. See 40 CFR §1505.1(e) and CEQ's *40 Most Asked Questions* - Number 1a (https://ceq.doe.gov/nepa/regs/40/40p3.htm).

The Draft EIS discusses alternative ROW routes as "Alternatives Considered but Dismissed from Analysis." The decisions regarding alternate routes and criteria weighting are not as detailed as they would be if they were considered as alternative actions. The EPA recommends that the BLM consider and evaluate as alternatives in the EIS other routes for the ROW that could decrease the impacts expected from the project.

No Action Alternative

The Draft EIS makes the unsupported assertion that the No Action Alternative (denial of the ROW) would lead to the project proponent supplying the necessary utilities and shipping the oil produced via other means, primarily trucking. This assumption leads to other conclusions in the Draft EIS which are likewise unsupported by analysis. The applicant has not provided sufficient information for BLM to develop an analysis that would support, or contradict, the potential for supplying utilities or shipping product via other means, such as trucking. Because this conclusion is foundational to an appropriate analysis of impacts, it cannot be asserted without investigation and economic analysis to determine if trucking in fact is feasible or likely, and whether the additional expense of trucking would make the project uneconomic or would significantly change either the scope or the timing of the oil shale development.

The EPA recommends that additional detail and analysis be provided to understand how the operations, scale and the resulting impacts of South Project under the no action alternative would differ from the proposed action. Without additional information on the logistics, costs and impacts of the No Action alternative, the Draft EIS does not present a reasoned basis to conclude that the project would proceed even without the ROW.

Baseline for Effects Analysis

The Draft EIS is focused on comparing the Action Alternative to the No Action alternative, and there is very little analysis of the impacts of those alternatives on current resource conditions. The EPA recommends that the EIS evaluate all alternatives against a current condition baseline for each resource. While comparing alternatives against each other is valuable, evaluating alternatives against current conditions provides the public and decision makers a clear assessment of each alternative's impacts on the environment.

Other Federal Permits

As noted in the Draft EIS, the South Project will require additional permits for federal environmental programs in order to operate. Based on the information currently available, it is not clear which of those permitting actions will require additional compliance with NEPA. Therefore, it is valuable for the Final EIS to provide as much detail as is reasonably available regarding permitted activities of the South Project and their impacts.

The South Project will likely impact jurisdictional Waters of the U.S., and may require a Clean Water Act (CWA) Section 404 individual permit from the U.S. Army Corps of Engineers (Corps). Review of an individual CWA Section 404 permit application would trigger NEPA requirements for the Corps. We encourage the BLM to discuss with the Corps the possibility of combining analysis of both federal decisions into a single EIS. Combining connected NEPA actions into a single EIS is encouraged, as it provides more complete public disclosure and streamlines the NEPA process (see the CEQ's 40 Most Asked Questions, Number 9). Further, it may benefit both the BLM and the Corps to analyze the two Federal actions in a single EIS by reducing the information gathering and analysis burden on each agency individually. For example, analysis of the potential impacts of the South Project for the purposes of a CWA Section 404 permitting decision likely would require additional information from the applicant than the information that the applicant has previously provided to the BLM regarding the mining and processing activities. Therefore, a more detailed and accurate analysis of the impacts of the BLM's ROW decision would be possible.

General

We recommend that the BLM make further efforts to engage the applicant to disclose its operating plan and to provide supporting documentation and a credible estimate, or range of estimates, of the South Project's likely impacts in a Supplemental Draft EIS. Optimally, the applicant would provide details from their mine pre-feasibility studies or scaled estimates they reasonably could be expected to be able to provide based on their operations at other sites. Given that Enefit operates oil shale operations in Estonia and Jordan, other information likely exists regarding the company's mining and processing techniques that could inform BLM's quantification of likely impacts of the South Project.